

# EXHIBIT D

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS**

SINGULAR COMPUTING LLC,

Plaintiff,

v.

GOOGLE LLC,

Defendant.

Civil Action No. 1:19-cv-12551 FDS

Hon. F. Dennis Saylor IV

DEFENDANT GOOGLE LLC'S RESPONSES AND OBJECTIONS TO PLAINTIFF'S FIRST  
SET OF REQUESTS FOR PRODUCTION (NOS. 1-102)

**PROPOUNDING PARTY: PLAINTIFF SINGULAR COMPUTING LLC**

**RESPONDING PARTY: DEFENDANT, GOOGLE LLC**

**SET NO. ONE (NOS. 1-102)**

Pursuant to Rule 34 of the Federal Rules of Civil Procedure, Defendant Google LLC (“Google”) hereby objects to and responds to Plaintiff Singular Computing LLC’s (“Singular”) First Set of Requests for Production. The following objections apply to each request in Singular’s First Set of Requests for Production, whether or not stated separately in response to each particular document request.

1. Google objects to each request to the extent it is overly broad and not proportional to the needs of the case, particularly to the extent it asks Google to search for documents or things from all employees at Google and is not limited to a reasonable number of custodians among all of Google’s employees, purports to impose requirements beyond those of the Federal Rules of Civil Procedure, the local rules and the parties’ electronically stored information (“ESI”) agreement, seeks documents, information, or things in a format that Google does not maintain in the ordinary course of business, and is not narrowly tailored for this litigation.

2. Google objects to each request to the extent it requests documents and information protected from disclosure by the attorney-client privilege, attorney work product doctrine, or any other applicable privilege or protection as provided by law. Google will not produce such privileged or protected documents, and any production or disclosure of any privileged or protected documents shall not be deemed a waiver of any privilege. Any such disclosed documents or information shall be returned promptly to Google upon notification to Singular, and shall not be copied, used, or referred to in any way by Singular for any purpose.

3. Google objects to each request to the extent it requests documents or things that are not within Google's possession, custody or control. In making objections to any and all requests, Google does not indicate that responsive documents or things exist within the ownership, possession, custody or control of Google.

4. Google objects to each request to the extent it requires legal conclusions in order to provide a response and/or produce documents or things.

5. Google objects to each request to the extent it improperly and prematurely seeks discovery regarding expert opinions, invalidity contentions, or non-infringement contentions prior to the schedule set by the Court in this matter.

6. Google objects to each request to the extent that it seeks documents or things protected from disclosure by constitutional and/or statutory privacy rights, including those of third persons and Google.

7. Google objects to each request to the extent it seeks proprietary, trade secret or other confidential or competitively sensitive documents or things. Google will only produce such relevant, non-privileged materials subject to adequate protections for Google's confidential, trade secret and/or proprietary business or technical documents information via a protective order entered by the Court in this action.

8. Google objects to each request to the extent it is not reasonably limited to a time period relevant to this litigation, including by not being limited to the time period for which damages are allowable in this litigation.

9. Google objects to each request that seeks "all" or "any and all" documents or things regarding a given topic or topics on the grounds that such requests are not relevant to a claim or defense and not proportional to the needs of the case. Google is willing to meet and

confer to reasonably narrow those requests or to discuss reasonable limitations on the burden of any relevant search or inquiry.

10. Google objects to the definition of “Defendant,” “Google,” “you,” and “your” in paragraph 8 of Singular’s Definitions as overly broad, unduly burdensome, vague, and ambiguous and because the definition seeks to expand the definition of “Google” to encompass all Google’s “employees, agents, attorneys, representatives, or any other persons who have acted or purported to act for its behalf” including “its parents, subsidiaries, divisions, branches, predecessors, or successors-in-interest, and its agents, employees, officers, directors, and attorneys.” These definitions go beyond any reasonable or commonly accepted meaning of the terms. Google shall interpret this definition as only requiring Google to search for information from Google and a reasonable number of Google employees who Google reasonably believes might have information relevant to the claims and defenses at issue in this litigation.

11. Google makes these responses subject to and without waiving these objections but specifically states that it is willing to meet-and-confer in regard to each of the objections set forth above and below.

12. Google’s objections and responses herein are not to be construed as a waiver of any right or objection, or as an admission of the discoverability, relevance, materiality, or admissibility of any information or document. The production of a document or thing is not an indication of its relevance or admissibility.

13. An agreement by Google to search for and produce responsive documents does not mean that such documents exist. Such a response means that Google will produce relevant, responsive, non-privileged documents that it can locate with reasonable diligence, consistent with its obligations under the Federal Rules of Civil Procedure, the Local Rules of this Court,

and the Court's orders in this action.

Without limiting its General Objections in any way, Google makes specific objections to First Set of Requests for Production as follows:

## **RESPONSES TO REQUESTS FOR PRODUCTION**

### **REQUEST FOR PRODUCTION NO. 1:**

1. All documents and things relating to conception, design, development, testing, structure, function, operation, manufacture or use of the Accused Products.

### **RESPONSE TO REQUEST FOR PRODUCTION NO. 1:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is vague and ambiguous with respect to the terms “conception,” “structure,” “operation,” and “use”; (3) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (5) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents related to the conception, design, development, testing, structure, function, operation, manufacture, and use of the accused MXU Reduced Precision Multiply Cell and related functionality that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 2:**

2. All documents, including architecture design documents, training manuals, training videos, debugging records, sketch books, diagrams, flowcharts, source code documentation, change logs, specifications, repair records, maintenance records, user guides, system description, CAD files, operational manuals, architectural overviews, system descriptions (for system programmers including compiler developers), chip floor plans, WIKI documentation, correspondence with contractors, programmer logs, timesheets, and other work records, which refer to, explain, describe, define, or otherwise evidence the steps or acts taken by You or persons acting on the behalf of or in connection with You to design, create, build, develop, implement, operate, repair, debug, maintain and/or use the Accused Products, including documents relating to the surface area, transistor counts, and multiplier counts of the MXU, VPU and all other components of the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 2:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is vague and ambiguous with respect to the terms “steps,” “acts,” “implement,” “repair,” “debug,” “maintain,” “MXU,” “VPU,” and “all other components”; (3) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (5) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents related to designing and using the accused MXU Reduced Precision Multiply Cell and related functionality that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 3:**

3. All source code files, including all register-transfer language (RTL), hardware description language (HDL), Verilog, and VHDL files, relating to the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 3:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll source code files” that relate in any way to any of the Accused Products; and (2) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, and pursuant to the source code provisions of the protective order, Google will make available for inspection non-privileged responsive files sufficient to show the implementation of the accused MXU Reduced Precision Multiply Cell and related functionality that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 4:**

4. All documents that describe the capabilities of the Accused Products.



**RESPONSE TO REQUEST FOR PRODUCTION NO. 4:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; and (2) it is vague and ambiguous with respect to the term “capabilities.”

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents related to the capabilities of the accused MXU Reduced Precision Multiply Cell and related functionality that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 5:**

5. All documents that instruct any user, including a Google engineer/scientist/ technician, Google customer, or potential Google customer how to use the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 5:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; and (2) it is vague and ambiguous with respect to the term “use.”

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents related to instructing users on

how to use the accused MXU Reduced Precision Multiply Cell and related functionality that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 6:**

6. All documents sufficient to identify the dates (including the first and last dates) of the use, manufacture, sale, offer for sale, testing, and importation of the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 6:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is vague and ambiguous with respect to the terms “use,” “testing,” and “importation”; (2) it assumes that Google has sold, offered to sell, and imported the Accused Products; (3) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents sufficient to identify the dates Google first made and used the accused MXU Reduced Precision Multiply Cell that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 7:**

7. All documents and things relating to any software utilized in connection with the Accused Products, including Google software and any third party software used to deliver the Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 7:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” that relate to “any

software utilized in connection with the Accused Products” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is vague and ambiguous with respect to the phrase “software utilized in connection with the Accused Products”; (4) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (7) it is not reasonably limited to a time period relevant to this litigation; (8) it seeks the confidential, proprietary, and/or trade secret information of third parties

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 8:**

8. All documents and things relating to any of the Asserted Patents.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 8:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” that relate in any way to the Asserted Patents from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is neither relevant to nor proportional to the needs of the case as

it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is vague and ambiguous with respect to the phrase “relating to any of the Asserted Patents”; and (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents that refer to the Asserted Patents that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 9:**

9. All documents and things relating to when you first became aware of the '273 Patent.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 9:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” from all employees at Google and is not limited to a reasonable number of non-custodial locations; and (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents sufficient to show when it first

became aware of the '273 patent that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 10:**

10. All documents and things relating to when you first became aware of the '156 Patent.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 10:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” from all employees at Google and is not limited to a reasonable number of non-custodial locations; and (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents sufficient to show when it first became aware of the '156 patent that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 11:**

11. All documents and things relating to when you first became aware of the '961 Patent.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 11:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the

case to the extent it asks Google to search for “[a]ll documents and things” from all employees at Google and is not limited to a reasonable number of non-custodial locations; and (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents sufficient to show when it first became aware of the ’961 patent that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 12:**

12. All documents and things relating to Singular, its products, services, research, technology, and intellectual property.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 12:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (3) it is not reasonably limited to a time period relevant to this litigation

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted

above, Google will produce non-privileged responsive documents relating to Singular that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 13:**

13. All documents and things relating to any investigation, analysis, opinion or advice (whether written or oral) concerning the '273 Patent, including, without limitation, the validity, inventorship, ownership, infringement, enforceability, or scope of the '273 Patent, or whether any specific product(s) does or does not infringe one or more claims of the '273 Patent.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 13:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (3) it is not reasonably limited to a time period relevant to this litigation

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents relating to any investigation, analysis, opinion or advice concerning the '273 Patent that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 14:**

14. All documents and things relating to any investigation, analysis, opinion or advice (whether written or oral) concerning the '156 Patent, including, without limitation, the validity,

inventorship, ownership, infringement, enforceability, or scope of the '156 Patent, or whether any specific product(s) does or does not infringe one or more claims of the '156 Patent.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 14:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (3) it is not reasonably limited to a time period relevant to this litigation

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents relating to any investigation, analysis, opinion or advice concerning the '156 Patent that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 15:**

15. All documents and things relating to any investigation, analysis, opinion or advice (whether written or oral) concerning the '961 Patent, including, without limitation, the validity, inventorship, ownership, infringement, enforceability, or scope of the '961 Patent, or whether any specific product(s) does or does not infringe one or more claims of the '961 Patent.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 15:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the



case to the extent it asks Google to search for “[a]ll documents and things” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (3) it is not reasonably limited to a time period relevant to this litigation

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents relating to any investigation, analysis, opinion or advice concerning the ’961 Patent that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 16:**

16. All documents and things relating to your proposed construction or interpretation of any term(s) used by any claim of the Asserted Patents.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 16:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (3) it is not reasonably limited to a time period relevant to this litigation; (4) it seeks information and/or documents not within Google’s possession, custody, or control; (5) it seeks public documents that are equally available to Singular as to Google and for which the burden and costs of

searching for, and producing, such public documents would be equivalent for either party; (6) it calls for a legal conclusion; and (7) it seeks the disclosure of Google's claim constructions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents relating to its proposed construction or interpretation of any term(s) used by any claim of the Asserted Patents that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 17:**

17. All documents and things relating to any efforts by you to design around any claim of the Asserted Patents.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 17:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents relating to any Google efforts to design around any claim of the Asserted Patents that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 18:**

18. All prior art to the Asserted Patents of which you are aware.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 18:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it seeks information and/or documents not within Google's possession, custody, or control; (2) it seeks public documents that are equally available to Singular as to Google and for which the burden and costs of searching for, and producing, such public documents would be equivalent for either party; and (3) it seeks the disclosure of Google's invalidity contentions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive prior art documents that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 19:**

19. All documents and things that describe or otherwise indicate the level of education or experience of one of ordinary skill in the art for the Asserted Patents as of the respective priority dates for each of the Asserted Patents.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 19:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; (2) it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll documents and things" from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is vague and ambiguous with respect to the term "otherwise indicate"; and (4) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 20:**

20. All documents and things referring or relating to the commercial success; current popularity; or past, current, or future demand for the Accused Products, including without limitation any internal or third party communications, charts, data, analyses, studies, examinations, or reports relating to any of the following: participants in the market, market shares, marketing, marketing materials, and pricing of the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 20:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” that relate in any way to the commercial success of, popularity of, or demand for the Asserted Patents from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is vague and ambiguous with respect to the terms “commercial success,” “current popularity,” “demand,” and “pricing of the Accused Products”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows:  
Subject to and without waiving the foregoing objections, Google responds as follows: Google is

willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 21:**

21. All documents and things relating to your decision to deliver services (including the Accused Services) based on the use of the Accused Products, or relating to the use of the Accused Products in connection with any of your products or services (including any of the Accused Services).

**RESPONSE TO REQUEST FOR PRODUCTION NO. 21:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” that relate in any way to services that, in turn, might “relat[e] to the use of the Accused Products,” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (4) it is vague and ambiguous with respect to the phrases “relating to your decision to deliver services,” “based on the use of the Accused Products,” and “relating to the use of the Accused Products in connection with any of your products or services”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other

confidential or competitively sensitive materials that are not relevant to this litigation; and (6) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 22:**

22. All documents and things relating to your decision to use the Accused Products to deliver in whole or in part any Google product (including without limitation the Accused Services), or any Google AI or machine learning process used to provide any Google product including without limitation the Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 22:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” that relate in any way to services that use the Accused Products from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (4) it is vague and ambiguous with respect to the terms and phrases “Google product,” “Google AI or machine learning process,” and “used to provide any Google product”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or

joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (6) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 23:**

23. All documents and things relating to the utility and advantages of the Accused Products over any competing technology.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 23:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” that relate in any way to the “utility and advantages” of the Accused Products from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is vague and ambiguous with respect to the terms “utility,” “advantages,” and “competing technology”; and (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents refer to the performance or

cost of the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 24:**

24. If you contend that there were or are non-infringing alternatives or acceptable substitutes to the inventions described in the specification or any claim of the Patents-in-Suit, all documents that support that contention.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 24:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; and (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents relating to non-infringing alternatives or acceptable substitutes to the Patents-in-Suit that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 25:**

25. If you contend that you do not infringe any claim of the '273 Patent, all documents that support that contention.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 25:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it seeks the disclosure of expert analyses



and opinions prior to the date ordered by the Court; (2) it seeks the disclosure of Google's non-infringement contentions prior to the date ordered by the Court; and (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents in support of its contention that the Accused Products do not infringe the '273 Patent that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 26:**

26. If you contend that you do not infringe any claim of the '156 Patent, all documents that support that contention.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 26:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; (2) it seeks the disclosure of Google's non-infringement contentions prior to the date ordered by the Court; and (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents in support of its contention

that the Accused Products do not infringe the '156 Patent that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 27:**

27. If you contend that you do not infringe any claim of the '961 Patent, all documents that support that contention.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 27:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; (2) it seeks the disclosure of Google's non-infringement contentions prior to the date ordered by the Court; and (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents in support of its contention that the Accused Products do not infringe the '961 Patent that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 28:**

28. All documents and things identified in your response to any of Plaintiff's interrogatories.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 28:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it calls for, or may be construed as calling

for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (2) it is not proportional to the needs of the case to the extent it asks Google to produce all “things” identified in any of Google’s responses to any of Singular’s interrogatories. Google will not produce objects or persons identified in its responses and construes this request as seeking production of documents explicitly identified and referenced in its responses to Singular’s interrogatories.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents identified in response to Singular’s interrogatories.

**REQUEST FOR PRODUCTION NO. 29:**

29. All documents and things that you consulted or relied upon in preparing your responses to any of Singular’s interrogatories to you.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 29:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is vague and ambiguous with respect to the terms “consulted” and “relied upon”; (2) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (3) it seeks public documents that are equally available to Singular as to Google and for which the burden and costs of searching for, and producing, such public documents would be equivalent for either party.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted

above, Google will produce non-privileged responsive documents that it relied upon in preparing its responses to Singular's interrogatories.

**REQUEST FOR PRODUCTION NO. 30:**

30. All documents and things concerning the subject matter of any of Singular's interrogatories to you.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 30:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll documents and things" that might concern any of Singular's interrogatories from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is vague and ambiguous with respect to the phrase "concerning the subject matter"; (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (4) it seeks public documents that are equally available to Singular as to Google and for which the burden and costs of searching for, and producing, such public documents would be equivalent for either party; and (5) it is duplicative of Singular's other requests for production (e.g., Request Nos. 28 and 29), and thus Google interprets this request as seeking the same documents sought in those requests.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 31:**

31. All documents, including organizational charts, sufficient to identify the members of the product group, or business segment(s) responsible for the Accused Products, and specifically including the design of TPU v.2 and TPU v.3.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 31:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is vague and ambiguous with respect to the phrase “members of the product group, or business segment(s) responsible for the Accused Products”; and (2) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce organizational charts sufficient to identify the members of the Google Platforms team responsible for development of the the accused TPU v2 and TPU v3 processors.

**REQUEST FOR PRODUCTION NO. 32:**

32. All documents and things relating to your document retention policy, including the storage, retention, archiving, and destruction of documents, including electronic documents.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 32:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” that might concern any of Google’s document retention policies; (2) it is vague and ambiguous with respect to the terms and phrases “document retention policy,” “storage,” “retention,” “archiving” and

“destruction”; (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (4) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents sufficient to identify its document retention policies that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 33:**

33. All documents and things relating to your intellectual property policies and practices.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 33:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” that might concern any of Google’s intellectual property policies and practices across numerous platforms and services; (2) it is vague and ambiguous with respect to the phrase “intellectual property policies and practices”; (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (4) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a

reasonable number of non-custodial locations; and (5) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 34:**

34. Copies of any patents and patent applications filed by you that would cover any aspect of the Accused Products, including without limitation at least US Patent No. 10,621,269 and all continuations, continuations-in-part, or divisions thereof, and any reissues or extensions thereof.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 34:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is vague and ambiguous with respect to the phrase “any aspect”; (2) it is not proportional to the needs of the case to the extent it asks Google to search for patents covering “any aspect” of the Accused Products; and (3) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce patents and patent applications that may be related to the matrix multiplier and related functionality in the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 35:**

35. All documents created by or on behalf of you, or received by you, before the filing of the complaint in this action that reference one or more of the Asserted Patents.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 35:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” that reference the Asserted Patents; (2) it is vague and ambiguous with respect to the terms and/or phrases “created by or on behalf of you,” “before the filing of the complaint in this action,” “references,” and “received by you”; (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (4) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (5) it seeks the confidential, proprietary, and/or trade secret information of third parties; and (6) it is duplicative and/or redundant in light of Request for Production Nos. 8-11 and 13-15.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, and to the extent any such documents exist, Google will produce non-privileged responsive documents that specifically reference the Asserted Patents that are within its possession, custody, or control that it locates after a reasonably diligent search; however, because they are equally available to Singular, Google will not produce publicly available materials, such



as patents and patent applications, that reference the Asserted Patents (to the extent they even exist).

**REQUEST FOR PRODUCTION NO. 36:**

36. All documents and things produced by you in any other patent litigation involving any of the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 36:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents and things” that involve the Accused Products; (2) it is vague and ambiguous with respect to the phrase “patent litigation involving any of the Accused Products”; (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (4) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; and (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is not aware of any other litigation where the MXU Reduced Precision Multiply Cells are accused of patent infringement.

**REQUEST FOR PRODUCTION NO. 37:**

37. All transcripts, affidavits, declarations, audio recordings, and exhibits relating to any sworn testimony, including but not limited to deposition and trial testimony, given by anyone testifying on your behalf in any proceeding relating to the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 37:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll transcripts, affidavits, declarations, audio recordings, and exhibits” relating to any sworn testimony relating to the Accused Products; (2) it is vague and ambiguous with respect to the phrase “on your behalf in any proceeding relating to the Accused Products”; (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (4) it is not proportional to the needs of the case to the extent it asks Google to search for materials related to “any sworn testimony” in “any proceeding relating to the Accused Products” and is not limited to a reasonable number of non-custodial locations; and (5) it is overbroad and not reasonably calculated to lead to the discovery of admissible evidence.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is not aware of any other Google is not aware of any other litigation where the MXU Reduced Precision Multiply Cells are accused of patent infringement.

**REQUEST FOR PRODUCTION NO. 38:**

38. All documents relating to your policies and practices concerning licensing intellectual property to and from others.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 38:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” that might concern any policies or practices concerning licensing intellectual property from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is vague and ambiguous with respect to the terms and phrases “policies,” “practices,” “concerning licensing intellectual property to and from others”; (3) it is not reasonably limited to a time period relevant to this litigation; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks the confidential, proprietary, and/or trade secret information of third parties; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (7) it is duplicative of Singular’s other requests for production (e.g., Request No. 33).

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 39:**

39. All documents relating to and including licenses, patent licenses, settlement agreements, covenants not to sue, or other agreements relating to the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 39:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the

case to the extent it asks Google to search for “[a]ll documents” that relate to licensing that in turn relate to the Accused Products; (2) it is not proportional to the needs of the case to extent it asks Google to search for documents from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is vague and ambiguous with respect to the phrase “other agreements”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks the confidential, proprietary, and/or trade secret information of third parties; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (7) it seeks confidential information of third parties and/or information that is protected by the mediation and/or settlement privilege; and (8) it is duplicative of Singular’s other requests for production (e.g., Request No. 38).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive patent license agreements related to the the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 40:**

40. All documents relating to royalties (including patent royalties) or license fees that you have paid or are paying relating to the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 40:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the

case to the extent it asks Google to search for “[a]ll documents” that relate to royalties or license fees that in turn relate to the Accused Products; (2) it is not proportional to the needs of the case to extent it asks Google to search for documents from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is vague and ambiguous with respect to the phrase “fees that you have paid or are paying related to the Accused Products”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks the confidential, proprietary, and/or trade secret information of third parties; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (7) it seeks confidential information of third parties and/or information that is protected by the mediation and/or settlement privilege; and (8) it is duplicative of Singular’s other requests for production (e.g., Requests No. 38 and 39).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive patent license agreements related to the the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 41:**

41. All documents relating to royalties (including patent royalties) or license fees that you have collected or received, or are collecting or receiving, relating to the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 41:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is not proportional to the needs of the

case to the extent it asks Google to search for “[a]ll documents” that relate to royalties or license fees that in turn relate to the Accused Products; (2) it is not proportional to the needs of the case to extent it asks Google to search for documents from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is vague and ambiguous with respect to the phrase “fees that you have paid or are paying related to the Accused Products”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks the confidential, proprietary, and/or trade secret information of third parties; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (7) it seeks confidential information of third parties and/or information that is protected by the mediation and/or settlement privilege; and (8) it is duplicative of Singular’s other requests for production (e.g., Requests No. 38 and 39).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive patent license agreements related to the the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

#### **REQUEST FOR PRODUCTION NO. 42:**

42. All documents relating to the marketing of the Accused Products or of any products that make use of the Accused Products, including the Accused Services.

#### **RESPONSE TO REQUEST FOR PRODUCTION NO. 42:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to

the phrases “marketing of the Accused Products” and “products that make use of the Accused Products”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks the confidential, proprietary, and/or trade secret information of third parties; (7) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (8) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged marketing documents related to the the accused TPU v2 and TPU v3 processors and Cloud TPU products/services that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 43:**

43. All documents relating to revenues and/or pre-tax income attendant to the Accused Products or attendant to any products making use of the Accused Products, including the Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 43:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrases “relating to revenues,” “pre-tax income attendant to the Accused Products,” “or attendant to any products” and “products making use of the Accused Products”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks the confidential, proprietary, and/or trade secret information of third parties; (7) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (8) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 44:**

44. All documents relating to operating costs and/or expenses for the Accused Products or any products making use of the Accused Products, including the Accused Services.



**RESPONSE TO REQUEST FOR PRODUCTION NO. 44:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase “products that make use of the Accused Products”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks the confidential, proprietary, and/or trade secret information of third parties; (7) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (8) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents refer to the performance or cost of the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 45:**

45. All documents sufficient to show research and development costs and expenses relating to the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 45:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is vague and ambiguous with respect to the phrase “research and development costs and expenses”; (2) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is not reasonably limited to a time period relevant to this litigation; and (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive profit and loss statements sufficient to identify the costs and expenses related to development of the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control and that can be located after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 46:**

46. All documents relating to your research or development of the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 46:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is vague and ambiguous with respect to the phrase “research or development”; (2) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is not reasonably limited to a

time period relevant to this litigation; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; and (5) it is duplicative of other Singular requests for production (including, for example, Nos. 2-3).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents related to the research and development of the accused MXU Reduced Precision Multiply Cell that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 47:**

47. All documents relating to operating profits for the Accused Products, or any products making use of the Accused Products, including the Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 47:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is vague and ambiguous with respect to the phrases “operating profits” and “products making use of the Accused Products”; (2) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is not reasonably limited to a time period relevant to this litigation; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it

seeks the confidential, proprietary, and/or trade secret information of third parties; (7) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (8) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged documents sufficient to show (a) the costs and expenses related to development of the accused TPU v2 and TPU v3 processors, and (b) the profits and losses related to Google's sale of the accused Google Cloud TPU products/services that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 48:**

48. All documents relating to projections for sales or use of the Accused Products, or any products making use of the Accused Products including the Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 48:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is vague and ambiguous with respect to the terms and phrases "projections for sales or use of the Accused Products" and "products making use of the Accused Products"; (2) it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll documents" from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is not reasonably limited to a time period relevant to this litigation; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term "Accused Services"; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or

common interest or joint defense privilege; (6) it seeks the confidential, proprietary, and/or trade secret information of third parties; (7) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (8) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged documents sufficient to show its sales projections for Google Cloud TPU products/services that can be located after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 49:**

49. All development profit and loss statements for the Accused Products, or any products making use of the Accused Products, including the Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 49:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that: (1) it is vague and ambiguous with respect to the phrases “development profit and loss statements” and “products making use of the Accused Products”; (2) it is not reasonably limited to a time period relevant to this litigation; (3) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks the confidential, proprietary, and/or trade secret information of third parties; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (8) it is compound.

Subject to and without waiving the foregoing objections, Google responds as follows: Google incorporates its responses to Request for Production Nos. 45 and 47 and is willing to meet and confer to discuss the scope and relevance of any additional documents sought by Singular.

**REQUEST FOR PRODUCTION NO. 50:**

50. Your publicly-disclosed financial statements.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 50:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is not proportional to the needs of the case to the extent it asks Google to search for all publicly-disclosed financial statements; (2) it is vague and ambiguous with respect to the phrase “publicly-disclosed financial statements”); (3) it is not reasonably limited to a time period relevant to this litigation; and (4) it seeks public documents that are equally available to Singular as to Google and for which the burden and costs of searching for, and producing, such public documents would be equivalent for either party.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce Google’s and Alphabet Inc.’s 10-K filings from January 1, 2016, to present.

**REQUEST FOR PRODUCTION NO. 51:**

51. All documents concerning, discussing, evaluating and/or analyzing the monetary and/or nonmonetary value that your customers and/or end users of the Accused Products and Accused Services attribute to the features of the Accused Products, including the existence and substance of any related studies, surveys, presentations, reports, or other similar documentation.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 51:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrases “monetary and/or nonmonetary value” and “including the existence and substance of any related studies, surveys, presentations, reports, or other similar documentation”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks the confidential, proprietary, and/or trade secret information of third parties; (7) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (8) it is compound; and (9) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents related to analyzing the value users attribute to the accused TPU v2 and TPU v3 processors and/or Google Cloud services provided with those processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 52:**

52. All documents concerning, discussing, evaluating and/or analyzing the monetary and/or nonmonetary value that you accord the features of the Accused Products and Accused Services, including the pricing of such features and the existence and substance of any related studies, surveys, presentations, reports, or other similar documentation.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 52:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrases “monetary and/or nonmonetary value” and “including . . . the existence and substance of any related studies, surveys, presentations, reports, or other similar documentation”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (7) it is compound; and (8) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted



above, Google will produce non-privileged responsive documents related to analyzing the value users attribute to the accused TPU v2 and TPU v3 processors and/or Google Cloud services provided with those processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 53:**

53. All documents concerning comparisons of the Accused Products and Accused Services to comparable products and services of any other person or entity.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 53:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase “comparable products and services”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (7) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; and (8) it seeks documents already within Singular’s possession, custody or control, and/or that are equally available to Singular.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents related to comparisons of (a) the accused TPU v2 and TPUv3 processors to competing processing units for machine learning (e.g., GPUs), and (b) the accused Cloud TPU service to competing services for machine learning (e.g., Amazon Web Services), that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 54:**

54. All reports, reviews and/or studies of each and every product in competition with the Accused Products and Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 54:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase “product in competition with the Accused Products and Accused Services”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll reports, reviews and/or studies” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks proprietary trade secret or other confidential or

competitively sensitive materials that are not relevant to this litigation; (7) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; (8) it seeks documents already within Singular's possession, custody or control, and/or that are equally available to Singular; (9) it is duplicative of Singular's other requests for production (*e.g.*, Request No. 53); and (10) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents related to comparisons of (a) the accused TPU v2 and TPUv3 processors to competing processing units for machine learning (*e.g.*, GPUs), and (b) the accused Cloud TPU service to competing services for machine learning (*e.g.*, Amazon Web Services), that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 55:**

55. All reports, reviews and/or studies of competitor systems and services employing any of the Accused Products and Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 55:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase "product in competition with the Accused Products and Accused Services"; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll reports, reviews, and/or studies" from all employees at Google and is not limited to a reasonable number

of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (7) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; (8) it seeks documents already within Singular’s possession, custody or control, and/or that are equally available to Singular; and (9) it is duplicative of Singular’s other requests for production (*e.g.*, Request Nos. 53 and 54).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents related to comparisons of (a) the accused TPU v2 and TPUv3 processors to competing processing units for machine learning (*e.g.*, GPUs), and (b) the accused Cloud TPU service to competing services for machine learning (*e.g.*, Amazon Web Services), that are within its possession, custody, or control that it locates after a reasonably diligent search.

#### **REQUEST FOR PRODUCTION NO. 56:**

56. All presentations, whether written, verbal, recorded, televised and/or broadcast (via the Internet or otherwise), concerning the Accused Products and Accused Services.

#### **RESPONSE TO REQUEST FOR PRODUCTION NO. 56:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is neither relevant to nor proportional to

the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (2) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll presentations” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; and (7) it seeks documents already within Singular’s possession, custody or control, and/or that are equally available to Singular.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged presentations related to the accused TPUv2 and TPUv3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 57:**

57. All documents concerning your business and/or financial relationship with third parties concerning the design, development, implementation, use, sale, distribution, or promotion of the Accused Products, including any components and/or features thereof.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 57:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase “business and/or financial relationship”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the confidential, proprietary, and/or trade secret information of third parties; and (7) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents related to Google’s relationships with third parties related to the design and development of the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 58:**

58. All license agreements and/or contracts concerning the design, development, implementation, use, sale, distribution, or promotion of the Accused Products, including any components and/or features thereof.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 58:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (2) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll license agreements and/or contracts” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (4) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (5) it seeks the confidential, proprietary, and/or trade secret information of third parties; and (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents related to Google’s relationships with third parties related to the design and development of the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 59:**

59. All internal analyses or market studies prepared by (or for) you concerning the importance or benefits of the Accused Products and Accused Services, including without limitation any features or components thereof.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 59:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrases “internal analyses or market studies,” “importance or benefits” and “features or components thereof”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll internal analyses or market studies” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (7) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive analyses of the benefits of the accused



Tensor Processing Units that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 60:**

60. All documents produced by any third-party pursuant to subpoena in this lawsuit.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 60:**

Google incorporates each of its general objections by reference.

Subject to and without waiving the foregoing objections, Google responds as follows:

Google will produce documents responsive to this request.

**REQUEST FOR PRODUCTION NO. 61:**

61. All documents concerning or consisting of profit and loss (P&L) statements of any product group or business segment(s) responsible for the Accused Products or Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 61:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (2) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret

or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; (7) it is not reasonably limited to a time period relevant to this litigation; and (8) it is duplicative of Singular's other requests for production (*e.g.*, Request Nos. 45, 47, and 49) .

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged documents sufficient to show (a) the costs and expenses related to development of the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control; and (b) the profits and losses related to Google's sale of the accused Google Cloud TPU products/services that are within its possession, custody, or control that it locates can be located after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 62:**

62. All documents concerning or consisting of Product Requirement Documents (PRD) or similar development planning documents concerning the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 62:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase "similar development planning documents"; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll documents" from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege,

the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents that are related to the accused MXU Reduced Precision Multiply Cell that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 63:**

63. All documents concerning or consisting of third-party industry or market reports concerning the Accused Products or Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 63:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (2) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret

or other confidential or competitively sensitive materials that are not relevant to this litigation; and (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive third-party industry or market reports related to the accused TPU v2 and TPU v3 processors and Cloud TPU product that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 64:**

64. All documents concerning or consisting of third-party industry/market reports concerning the market for the Accused Products or Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 64:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (2) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term “Accused Services”; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret

or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; (7) it is duplicative of Singular's other requests for production (*e.g.*, Request No. 63); and (8) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive third-party industry or market reports related to the accused TPU v2 and TPU v3 processor and Cloud TPU product that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 65:**

65. All documents concerning or consisting of competitive intelligence/analysis reports (internal and/or third-party) concerning the Accused Products or Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 65:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (2) it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll documents" from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case in its use of the term "Accused Services"; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret

or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; and (7) it is duplicative of Singular's other requests for production (*e.g.*, Request No. 63).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged responsive documents related to comparisons of (a) the accused TPU v2 and TPUv3 processors to competing processing units for machine learning (*e.g.*, GPUs), and (b) the accused Cloud TPU service to competing services for machine learning (*e.g.*, Amazon Web Services), that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 66:**

66. All price lists, profit or loss statements or projections, and market studies relating to the sale of, or sale of services in connection with, the Accused Products or Accused Services.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 66:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase "to the sale of, or sale of services in connection with, the Accused Products or Accused Services"; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll price lists, profit or loss statements or projections, and market studies" from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not

proportional to the needs of this case in its use of the term “Accused Services”; (5) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (6) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (7) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; and (8) it is duplicative of Singular’s other requests for production (*e.g.*, Request Nos. 59, 61).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged documents sufficient to show (a) the costs and expenses related to development of the accused TPU v2 and TPU v3 processors, and (b) the profits and losses related to Google’s sale of the accused Google Cloud TPU products/services that are within its possession, custody, or control that it locates can be located after a reasonably diligent search..

**REQUEST FOR PRODUCTION NO. 67:**

67. All documents and things identified in your initial disclosures pursuant to Rule 26(a)(1) of the Federal Rules of Civil Procedure.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 67:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (2) it seeks information and/or documents not within Google’s possession, custody, or control; (3) it seeks documents already

within Singular's possession, custody or control, and/or that are equally available to Singular; and (4) it calls for premature disclosure of materials in advance of any hearing, trial, submission to the Court, or deposition.

Subject to and without waiving the foregoing objections, Google responds as follows: Google will produce non-privileged material it intends to use to support its claims or defenses at the time it uses such material or in accordance with the schedule set by the Court.

**REQUEST FOR PRODUCTION NO. 68:**

68. All documents and things you expect to use, introduce into evidence, or otherwise rely upon at any hearing, trial, submission to the Court, or deposition in this matter.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 68:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (2) it seeks information and/or documents not within Google's possession, custody, or control; (3) it seeks documents already within Singular's possession, custody or control, and/or that are equally available to Singular; and (4) it calls for premature disclosure of materials in advance of any hearing, trial, submission to the Court, or deposition.

Subject to and without waiving the foregoing objections, Google responds as follows: Google will produce non-privileged material it uses, introduces into evidence, or relies upon at any hearing, trial, submission to the Court, or deposition in this matter at the time it uses such material or in accordance with the schedule set by the Court.



**REQUEST FOR PRODUCTION NO. 69:**

69. All documents concerning or consisting of any capital asset requests and/or analyses associated with developing Google's data centers without the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 69:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrases "capital asset requests" and "analyses associated with developing Google's data centers"; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll documents" from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; and (7) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged relevant documents related to the costs of operating the accused TPU v2 and TPU v3 processors in its data centers that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 70:**

70. All documents concerning or consisting of any capital asset requests and analyses associate [*sic*] with developing Googles [*sic*] data centers with the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 70:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrases “capital asset requests” and “analyses associate [*sic*] with developing Google’s data centers”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged relevant documents related to the costs of operating the accused TPU v2 and TPU v3 processors in its data centers that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 71:**

71. All operating budgets and plans for Google data centers operating without the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 71:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase “operating budgets and plans”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll operating budgets and plans” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; and (7) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 72:**

72. All operating budgets and plans for Google data centers operating with the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 72:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase “operating budgets and plans”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll operating budgets and plans” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; and (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 73:**

73. All profit and loss statements or other financial analyses prepared by Google related to the actual operation of its data centers with and without the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 73:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrases “profit and loss statements or other financial analyses” and “actual operation”; (2) it

is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll profit and loss statements or other financial analyses” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; (6) it is duplicative of Singular’s other requests for production (*e.g.*, Request Nos. 71, 72); and (7) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 74:**

74. All business planning documents, long-term capital expenditure plans, or other studies from prior to the use of the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 74:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase “business planning documents, long-term capital expenditure plans, or other studies”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is

not proportional to the needs of the case to the extent it asks Google to search for “[a]ll operating budgets and plans” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; and (7) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 75:**

75. All business planning documents, long-term capital expenditure plans or other studies from prior to the use of the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 75:**

Google incorporates each of its general objections by reference. Google further objects to this request on the grounds and to the extent that (1) it is vague and ambiguous with respect to the phrase “business planning documents, long-term capital expenditure plans, or other studies”; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case; (3) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll business planning documents, long-term capital expenditure plans or other studies” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (4) it calls for, or

may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (5) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (6) it seeks the disclosure of expert analyses and opinions prior to the date ordered by the Court; (7) it is duplicative of Singular's other requests for production (*e.g.*, Request No. 74); and (8) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 76:**

76. All studies performed either internally by Google or by third parties discussing system architecture for Google data centers with or without the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 76:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents regarding the system architecture of Google data centers unrelated to the Accused Products; (2) it seeks the confidential, proprietary, and/or trade secret information of third parties; (3) it seeks proprietary trade secret or other confidential or competitively sensitive materials that are not relevant to this litigation; (4) it is not reasonably limited to a time period relevant to this litigation; (5) it seeks information and/or documents not within Google's possession, custody, or control, including by requesting third-parties' studies.

Subject to and without waiving the foregoing objections, Google responds as follows:

Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 77:**

77. All studies internally by Google or by third parties discussing the benefits of using the Accused Products as opposed to other products, computer systems, devices, and other hardware/software having architectures that differ from those used by the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 77:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it seeks the confidential, proprietary, and/or trade secret information of third parties; (2) it seeks information and/or documents not within Google's possession, custody, or control, including by requesting third-party studies; (3) it is duplicative of Singular's other requests for production (e.g., Request No. 53).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents related to comparisons of TPU v2 and TPuv3 to competing processing units for machine learning (e.g., GPUs).

**REQUEST FOR PRODUCTION NO. 78:**

78. All documents supporting the decision to make investments in designing and making the Google Tensor Processing Unit v.1 ("TPU v.1") in-house, including business analyses, capital asset requests, research and development expenditure requests, research and development reports and presentations related to the development of the TPU v.1, presentations to management and/or Google's board to support the decision to implement the TPU v.1.



**RESPONSE TO REQUEST FOR PRODUCTION NO. 78:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is neither relevant to nor proportional to the needs of the case as it is not directed to elements, aspects, or functionalities of the specific accused products at issue in this case.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents related to the decision to start the TPU program that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 79:**

79. All documents supporting the decision to make investments in designing and making the Accused Products in-house, including business analyses, capital asset requests, research and development expenditure requests, research and development reports and presentations related to the development of the Accused Products and presentations to management and/or Google’s board to support the decision to implement the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 79:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents related to the decision to start the TPU program that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 80:**

80. All documents relating to the fabrication of the Accused Products, including costs of fabrication and testing of the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 80:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it seeks the confidential, proprietary, and/or trade secret information of third parties; (3) it seeks information and/or documents not within Google’s possession, custody, or control.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents that are related to manufacturing the accused TPU products, including documents sufficient to show related manufacturing costs, that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 81:**

81. All budgets and forecasts related to the development and operation of all Google Cloud businesses, including Cloud Platform, Cloud AI and Cloud TPU.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 81:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents unrelated to the Accused Products; (2) it seeks public documents that are equally available to Singular as to Google and for which the burden and costs of searching for, and producing, such public documents would be equivalent for either party; (3) it is not reasonably limited to a time period relevant to this litigation; (4) it is duplicative of Singular's other discovery requests (e.g., Request for Production No. 48).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged documents sufficient to show its business projections for Google Cloud TPU products/services that can be located after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 82:**

82. All documents sufficient to identify your actual revenues, costs and profits from the operation of all Google Cloud businesses, including Cloud Platform, Cloud AI and Cloud TPU, or any other Google service or business that makes use of the Accused Products, including, but not limited to, any profit and loss statements and other documents and presentations evidencing your actual revenues, costs and profits from the operation of the Google Cloud business or any other Google service or business making use of the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 82:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is overbroad, not reasonably calculated to

lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents unrelated to the Accused Products; (2) it seeks public documents that are equally available to Singular as to Google and for which the burden and costs of searching for, and producing, such public documents would be equivalent for either party; (3) it is not reasonably limited to a time period relevant to this litigation; (4) it is duplicative of Singular's other discovery requests (e.g., Request for Production No. 47).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged documents sufficient to show (a) the costs and expenses related to development of TPU v2 and TPU v3 processors, and (b) the profits and losses related to Google's sale of the accused Google Cloud TPU products/services that are within its possession, custody, or control and that can be located after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 83:**

83. All documents sufficient to identify your justification for your investment in hardware, personnel and operations in the Google Cloud businesses, including Cloud Platform, Cloud AI and Cloud TPU, or any other Google service or business making use of the Accused Products, including, but not limited to, any capital asset request(s) or similar document(s).

**RESPONSE TO REQUEST FOR PRODUCTION NO. 83:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case

insofar as it seeks documents unrelated to the Accused Products; (2) it is not reasonably limited to a time period relevant to this litigation.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above, Google will produce non-privileged documents sufficient to show its business projections for Google Cloud TPU products/services that can be located after a reasonably diligent search..

**REQUEST FOR PRODUCTION NO. 84:**

84. All documents relating to or comprising any studies, analyses or tests of the benefits of the TPU v.1, including without limitation technical functionality or cost reductions.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 84:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents unrelated to the Accused Products; (2) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 85:**

85. All documents relating to or comprising any studies, analyses and tests of the benefits of the Accused Products in comparison to TPU v.1, including without limitation technical functionality or cost reductions.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 85:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents comparing the performance and cost of accused TPU v2 and TPU v3 to TPU v1 that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 86:**

86. All documents relating to or comprising any studies, analyses, comparisons or tests of the Accused Products in comparison to TPU v.1, including, but not limited to, technical functionality, and/or cost reductions.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 86:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is duplicative of Singular’s other requests for production (e.g., Request No. 85).

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents comparing the performance and cost of accused TPU v2 and TPU v3 to TPU v1 that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 87:**

87. All documents that quantify, evaluate or estimate the value to you of the benefits of use of the Accused Products, including, but not limited to, improved search results, advertising placement, increases in volume of search and advertising, increased revenues, profits, advertising rates, and/or click-through rates.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 87:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents that refer to the performance or cost of the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 88:**

88. All documents relating to the decision to implement the Accused Products including, but not limited to, any details of internal tests performed by you measuring the benefits of implementing the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 88:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is duplicative of Singular’s other requests for production (e.g., Request No. 79); (2) it is not proportional to the needs of the case to the extent

it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents that are related to the decision to use the accused TPU products that are within its possession, custody, or control that it locates after a reasonably diligent search

**REQUEST FOR PRODUCTION NO. 89:**

89. All documents relating to any incremental revenues and/or profits earned by you from use of the Accused Products when compared to other architectures.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 89:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is vague and ambiguous with respect to the phrase “other architectures”; (3) it is not reasonably limited to the jurisdictional reach of the United States patent laws.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents that refer to the performance or cost of the accused TPU v2 and TPU v3 processors that are within its possession, custody, or control that it locates after a reasonably diligent search.



**REQUEST FOR PRODUCTION NO. 90:**

90. All documents sufficient to identify which of Google's products or services (including the Accused Services) use the Accused Products, and when each such Google product or service first used the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 90:**

Google incorporates each of its general objections by reference.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents sufficient to identify the approximate date that Google products began using TPUs.

**REQUEST FOR PRODUCTION NO. 91:**

91. All documents relating to the decision to use the Accused Products in providing Google's products or services (including the Accused Services).

**RESPONSE TO REQUEST FOR PRODUCTION NO. 91:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll documents" from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents that relate to the decision to use the Accused Products that are within its possession, custody, or control that it locates after a reasonably diligent search.

**REQUEST FOR PRODUCTION NO. 92:**

92. All documents concerning the decision to implement the TPU v.1 in Google's products or services (including the Accused Services).

**RESPONSE TO REQUEST FOR PRODUCTION NO. 92:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents unrelated to the Accused Products; (2) it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll documents" from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 93:**

93. All documents concerning the acquisition of DeepMind Technologies, including but not limited to, purchase price allocations, presentations related to the purchase rationale, board approvals and studies and analyses of the activities of DeepMind Technologies prepared by or for Google in connection with the acquisition of DeepMind Technologies.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 93:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents unrelated to the Accused Products; (2) it is not proportional to the

needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; (4) it seeks the confidential, proprietary, and/or trade secret information of third parties; (5) it seeks information and/or documents not within Google’s possession, custody, or control.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 94:**

94. All documents sufficient to show Google’s revenues, costs and profits from the operation of DeepMind Technologies.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 94:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents unrelated to the Accused Products; (2) it seeks public documents that are equally available to Singular as to Google and for which the burden and costs of searching for, and producing, such public documents would be equivalent for either party.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 95:**

95. All documents concerning the licensing or acquisition of any technology associated with the operation of Google data centers or other hardware for artificial intelligence or machine learning operations.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 95:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents unrelated to the Accused Products; (2) it is not reasonably limited to the jurisdictional reach of the United States patent laws; (3) it calls for, or may be construed as calling for, information protected from discovery by the attorney-client privilege, the work product doctrine, and/or common interest or joint defense privilege; it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: Google is willing to meet and confer to discuss the scope and relevance of the documents sought by Singular, if any.

**REQUEST FOR PRODUCTION NO. 96:**

96. All documents and things relating to your alleged conception, design, development and testing of the “bfloat16” number format and your use of the “bfloat16” number format in the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 96:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents unrelated to the Accused Products.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents that are related to Google’s decision to use the bfloat16 format in the matrix multiplier unit .

**REQUEST FOR PRODUCTION NO. 97:**

97. All documents and things sufficient to show which employee(s) at Google allegedly first conceived of the “bfloat16” number format and any applications thereof.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 97:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: (1) it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations; (2) it is overbroad, not reasonably calculated to lead to the discovery of admissible evidence, and not proportional to the needs of this case insofar as it seeks documents unrelated to the Accused Products.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above

Google will produce non-privileged responsive documents that are related to Google's decision to use the bfloat16 format in the matrix multiplier unit .

**REQUEST FOR PRODUCTION NO. 98:**

98. All documents and things sufficient to identify, define, or explain, any internal codenames, nicknames, or other names or titles used to refer to the Accused Products or the bfloat16 number format of the Accused Products, as well as any components thereof or hardware or software related thereto.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 98:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is not proportional to the needs of the case to the extent it asks Google to search for "[a]ll documents" from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: To the extent this request is narrowed and modified in accordance with the objections asserted above Google will produce non-privileged responsive documents that are related to Google's decision to use the bfloat16 format in the matrix multiplier unit .

**REQUEST FOR PRODUCTION NO. 99:**

99. All documents and things authored by Jeffrey Dean referring or relating to the Accused Products, including internal communications, documents, presentations, reports, investigations, emails, memoranda, or any other document authored by Jeffrey Dean referring or relating to the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 99:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: This request for custodial documents is governed by the parties ESI agreement and responsive documents will be produced in accordance with the agreed to procedures.

**REQUEST FOR PRODUCTION NO. 100:**

100. All documents and things authored by Norman Jouppi referring or relating to the Accused Products, including internal communications, documents, presentations, reports, investigations, emails, memoranda, or any other document authored by Norman Jouppi referring or relating to the Accused Products.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 100:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: This request for custodial documents is governed by the parties ESI agreement and responsive documents will be produced in accordance with the agreed to procedures.

**REQUEST FOR PRODUCTION NO. 101:**

101. All documents and things authored by Jeffrey Dean referring or relating to inventor Joseph Bates or Singular, including internal communications, documents, presentations, reports, investigations, emails, memoranda, or any other document authored by Jeffrey Dean referring or relating to inventor Joseph Bates or Singular.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 101:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.

Subject to and without waiving the foregoing objections, Google responds as follows: This request for custodial documents is governed by the parties ESI agreement and responsive documents will be produced in accordance with the agreed to procedures.

**REQUEST FOR PRODUCTION NO. 102:**

102. All documents and things authored by Norman Jouppi referring or relating to inventor Joseph Bates or Singular, including internal communications, documents, presentations, reports, investigations, emails, memoranda, or any other document authored by Norman Jouppi referring or relating to inventor Joseph Bates or Singular.

**RESPONSE TO REQUEST FOR PRODUCTION NO. 102:**

Google incorporates each of its general objections by reference. Google further objects to this request on grounds and to the extent that: it is not proportional to the needs of the case to the extent it asks Google to search for “[a]ll documents” from all employees at Google and is not limited to a reasonable number of non-custodial locations.



Subject to and without waiving the foregoing objections, Google responds as follows:  
This request for custodial documents is governed by the parties ESI agreement and responsive documents will be produced in accordance with the agreed to procedures.

Dated: August 24, 2020

By: /s/ Matthias Kamber

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PROOF OF SERVICE

I am employed in the City and County of San Francisco, State of California in the office of a member of the bar of this court at whose direction the following service was made. I am over the age of eighteen years and not a party to the within action. My business address is Kecker, Van Nest & Peters LLP, 633 Battery Street, San Francisco, CA 94111-1809.

On **August 24, 2020**, I served the following document(s):

**DEFENDANT GOOGLE LLC'S RESPONSES AND OBJECTIONS TO PLAINTIFF'S FIRST SET OF INTERROGATORIES (NOS. 1-10)**

**DEFENDANT GOOGLE LLC'S RESPONSES AND OBJECTIONS TO PLAINTIFF'S FIRST SET OF REQUESTS FOR PRODUCTION (NOS. 1-102)**

☒ by **E-MAIL VIA PDF FILE**, by transmitting on this date via e-mail a true and correct copy scanned into an electronic file in Adobe "pdf" format. The transmission was reported as complete and without error.

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Executed on **August 24, 2020**, at San Francisco, California. I declare under penalty of perjury that the foregoing is true and correct.



Dori Chan